

THE BRAIN: UNDERSTANDING NEUROBIOLOGY THROUGH THE STUDY OF ADDICTION		
New Jersey Core Curriculum Content Standards: Science – Grades 9 – 12		
Lesson	Standard	Indicator
1, 2, 3, 4	5.1.A.1	When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.
4, 5	5.1.A.2	Assess the risks and benefits associated with alternative solutions.
2, 3, 4	5.1.A.3	Engage in collaboration, peer review, and accurate reporting of findings.
1, 2, 3, 4	5.1.A.4	Explore cases that demonstrate the interdisciplinary nature of the scientific enterprise.
2, 3, 4	5.1.B.1	Select and use appropriate instrumentation to design and conduct investigations.
1, 2, 3, 4	5.1.B.2	Show that experimental results can lead to new questions and further investigations.
2, 3, 4	5.1.C.1	Understand, evaluate and practice safe procedures for conducting science investigations.
1, 2	5.4.A.1	Know that scientific inquiry is driven by the desire to understand the natural world and seeks to answer questions that may or may not directly influence humans, while technology is driven by the need to meet human needs and solve human problems.
1	5.4.B.1	Assess the impacts of introducing a new technology in terms of alternative solutions, costs, tradeoffs, risks, benefits and environmental impact.
1, 3, 4	5.5.A.4	Relate disease in humans and other organisms to infections or intrinsic failures of system.
4	5.5.B.2	Explain how the theory of natural selection accounts for extinction as well as an increase in the proportion of individuals with advantageous characteristics within a species.
4	5.5.C.2	Explain how genetic material can be altered by natural and/or artificial means; mutations and new gene combinations may have positive, negative, or no effect on organisms or species.
New Jersey Core Curriculum Content Standards: Mathematics – Grades 9 - 12		
Lesson	Standard	Expectation
3, 4, 5	4.1.A.1	Extend understanding of the number system to all real numbers.
3, 4, 5	4.1.B.1	Extend understanding and use of operations to real numbers and algebraic procedures.
3	4.2.D.2	Choose appropriate tools and techniques to achieve the specified degree of precision and error needed in a situation.

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3, 4	4.3.B.1	Understand relations and functions and select, convert flexibly among, and use various representations for them, including equations or inequalities, tables, and graphs.
3, 4	4.3.C.1	Use functions to model real-world phenomena and solve problems that involve varying quantities: growth/decay and change in the natural world and applications in mathematics, biology, and economics (including compound interest).
3, 4	4.4.A.1	Use surveys and sampling techniques to generate data and draw conclusions about large groups: advantages/disadvantages of sample selection methods (e.g., convenience sampling, responses to survey, random sampling).
3, 4	4.4.A.2	Evaluate the use of data in real-world contexts.
3, 4	4.5.A.2	Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3): open-ended problems, non-routine problems, problems with multiple solutions, or problems that can be solved in several ways.
3, 4	4.5.B.1	Use communication to organize and clarify their mathematical thinking: reading and writing, discussion, listening, and questioning.
3, 4	4.5.B.2	Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
3, 4, 5	4.5.C.3	Recognize that mathematics is used in a variety of contexts outside of mathematics.
3, 4, 5	4.5.C.4	Apply mathematics in practical situations and in other disciplines.
3, 4, 5	4.5.D.6	Evaluate examples of mathematical reasoning and determine whether they are valid.
3, 4, 5	4.5.E.1	Create and use representations to organize, record, and communicate mathematical ideas.
3, 4, 5	4.5.E.2	Select, apply, and translate among mathematical representations to solve problems.
2, 3, 4, 5	4.5.E.3	Use representations to model and interpret physical, social, and mathematical phenomena.
New Jersey Core Curriculum Content Standards: Language Arts Literacy – Grades 9 – 12		
Lesson	Standard	Indicator
All lessons	3.1.F.3	Apply reading vocabulary in different content areas.
1, 2, 3, 4	3.1.G.1	Identify, describe, evaluate, and synthesize the central ideas in informational texts.
All lessons	3.1.G.10	Differentiate between fact and opinion by using complete and accurate information, coherent arguments, and points of view.

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All lessons	3.1.H.5	Apply information gained from several sources or books on a single topic or by a single author to foster an argument, draw conclusions, or advance a position.
2, 3, 4	3.2.B.4	Write multi-paragraph, complex pieces across the curriculum using a variety of strategies to develop a central idea (e.g., cause-effect, problem/solution, hypothesis/results, rhetorical questions, parallelism).
All lessons	3.2.B.5	Write a range of essays and expository pieces across the curriculum, such as persuasive, analytic, critique, or position paper.
All lessons	3.2.C.1	Use Standard English conventions in all writing, such as sentence structure, grammar and usage, punctuation, capitalization, and spelling.
All lessons	3.2.C.8	Write legibly in manuscript or cursive to meet district standards.
All lessons	3.2.D.1	Employ the most effective writing formats and strategies for the purpose and audience.
All lessons	3.2.D.2	Demonstrate command of a variety of writing genres, such as: persuasive essay, personal narrative, research report, literary research paper, descriptive essay, critique, or response to literature.
All lessons	3.3.A.2	Support, modify, or refute a position in small or large-group discussions.
All lessons	3.4.A.1	Explore and reflect on ideas while hearing and focusing attentively.
1, 2, 3, 4	3.4.A.3	Demonstrate appropriate listener response to ideas in a persuasive speech, oral interpretation of a literary selection, or scientific or educational presentation.
All lessons	3.4.B.1	Listen to summarize, make judgments, and evaluate.
2, 4, 5	3.5.C.3	Recognize that creators of media and performances use a number of forms, techniques, and technologies to convey their messages.

New Jersey Core Curriculum Content Standards: Comprehensive Health and Physical Education – Grades 9 - 12

Lesson	Standard	Indicator
3, 4, 5	2.1.A.2	Investigate the impact of health choices and behaviors on personal, family, and community wellness.
3, 4, 5	2.1.A.3	Use health data to make predictions about wellness and recommend behavior changes to improve lifelong wellness.
3, 4, 5	2.1.A.4	Debate the social and ethical implications of the use of technology and medical advances to support wellness.
3, 4, 5	2.1.B.1	Recommend behaviors to enhance and support the optimal functioning of body systems.
4	2.1.B.3	Predict the impact of heredity and genetics on human growth and development.

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3, 4, 5	2.1.D.1	Analyze the availability and effectiveness of current and emerging diagnostic and treatment modalities for various diseases and health conditions.
5	2.1.D.4	Investigate and assess local, state, national, and international public health efforts.
3, 4	2.2.A.1	Use appropriate research methodology to investigate a health problem or issue.
3, 4	2.2.B.1	Demonstrate and evaluate the use of decision-making skills.
3, 4, 5	2.2.B.2	Evaluate factors that influence major health decisions and predict how those factors will change or conflict at various life stages.
3, 4, 5	2.2.B.4	Analyze the use of ethics and personal values when making decisions.
3, 4, 5	2.2.B.5	Critique significant health decisions and debate the choices made.
3, 4, 5	2.2.C.2	Evaluate how family, peers, healthcare providers, and the community support or hinder the achievement of a wellness plan.
3, 4, 5	2.3.B.6	Predict the physical, behavioral, and legal impacts of commonly abused substances, such as marijuana, inhalants, anabolic steroids, and party drugs.
4, 5	2.3.C.1	Compare and contrast the physical, social, and emotional indicators of possible substance abuse.
4, 5	2.3.C.3	Assess and evaluate factors that influence the use of alcohol, tobacco, and other drugs.
3, 4, 5	2.3.C.5	Predict the short-and long-term impacts of substance abuse on the individual, the family, the community, and society.